

WE CLAIM:

1. A pressure reducing valve, comprising:

a valve including a housing having an inlet and an outlet defining a flow passage therethrough and a flow actuating mechanism connected to said housing, said flow actuating mechanism including a stem in communication with said inlet and outlet, said stem being rotatably connected to said housing and being at least partially rotatably insertable in said housing, said stem is operable for actuating the valve in an open state or in a closed state according to an inserted position of the stem;

a tamper switch mechanism mounted on said stem, said tamper switch mechanism including an actuator contactable with said stem such that said tamper switch mechanism being actuatable according to said inserted position of said stem, wherein said tamper switch mechanism enables said valve to be monitored in the open state and the closed state.

2. The pressure reducing valve according to claim 1, wherein said stem and actuator including a contact/non-contact relationship when said stem is rotated into and out said housing.

3. The pressure reducing valve according to claim 2, wherein contact/non-contact relationship including said actuator contacting said larger width of said stem when said valve is in said open state, and not contacting said smaller width in of said stem when said valve is in said closed state.

4. The pressure reducing valve according to claim 2, wherein said contact/non-contact relationship being a compressed/non-compressed engagement such that said actuator compressibly engages with said stem when the valve is in the open state and disengages from said stem when the valve is in the closed state.

5. The pressure reducing valve according to claim 1, wherein said stem is rotatably insertable a distance into and out of said valve to operate said valve in said open and closed states.
6. The pressure reducing valve according to claim 5, wherein said distance is about 1/16 inches into or out of said housing.
7. The pressure reducing valve according to claim 5, wherein said distance corresponding with two clockwise or counterclockwise turns of said stem.
8. The pressure reducing valve according to claim 1, wherein said stem including a tapered portion disposed thereon, said tapered portion defining a larger width proximate said housing and a smaller width proximate a top of said stem.
9. The pressure reducing valve according to claim 1, wherein said actuator is a pin or bar that is compressibly engageable with said stem.
10. The pressure reducing valve according to claim 9, wherein said actuator is an elastomeric material.
11. The pressure reducing valve according to claim 1, wherein said flow actuating mechanism further comprising a handwheel disposed at a top of said stem, said tamper switch mechanism being mounted on said stem and between said handwheel and said housing.
12. The pressure reducing valve according to claim 11, wherein said tamper switch mechanism being constructed and arranged such that said tamper switch mechanism is contained within a clearance space of said handwheel and said housing.

13. The pressure reducing valve according to claim 1, wherein said tamper switch mechanism including switch components operatively connected with said actuator, said actuator being operable for creating or breaking a signal within said switch components according to said inserted position of said stem to indicate an operating condition of said valve.

14. The pressure reducing valve according to claim 1, wherein said tamper switch mechanism further comprising an audible device so as to indicate an operating condition of said valve.

15. A fluid delivery system, comprising:
a fluid delivery line connected to a fluid source; and
a pressure reducing valve adaptable with said fluid delivery line to receive an inlet pressure from said fluid delivery line and control an outlet pressure exiting said pressure reducing valve; said pressure reducing valve including a housing having an inlet and an outlet defining a flow passage therethrough and a flow actuating mechanism connected to said housing, said flow actuating mechanism including a stem in communication with said inlet and outlet, said stem being rotatably connected to said housing and being at least partially rotatably insertable in said housing, said stem is operable for actuating the valve in an open state or in a closed state according to an inserted position of the stem;
a tamper switch mechanism mounted directly on said stem, said tamper switch mechanism including an actuator contactable with said stem such that said tamper switch mechanism being actuatable according to said inserted position of said stem, wherein said tamper switch mechanism enables said pressure reducing valve to be monitored in the open state and the closed state.

16. A method of monitoring tampering of a pressure reducing valve in a fluid delivery system, comprising:

providing a pressure reducing valve adaptable for connection with a fluid delivery line in said fluid delivery system to receive an inlet pressure from said fluid delivery line and control an outlet pressure exiting said pressure reducing valve, said pressure reducing valve including an inlet and an outlet defining a flow passage therethrough and a flow actuating mechanism, said flow actuating mechanism including a stem, said stem being at least partially rotatably insertable into said housing to control said pressure reducing valve in an open state or in a closed state according to an inserted position of said stem;

mounting a tamper switch mechanism on said stem, said tamper switch mechanism being actuatable according to said inserted position of said stem,

actuating said tamper switch mechanism; and

monitoring said pressure reducing valve wherein said tamper switch mechanism indicates an operating condition of said pressure reducing valve in the open state and in the closed state.